

REPORT DOCUMENTATION PAGE					Form Approved OMB No. 0704-0188	
<p>The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p> <p><b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b></p>						
1. REPORT DATE (DD-MM-YYYY) 03/23/2005		2. REPORT TYPE FINAL TECHNICAL			3. DATES COVERED (From - To) June 2001 - December 2004	
4. TITLE AND SUBTITLE Rural Alaska Science and Mathematics Network				5a. CONTRACT NUMBER N00014-98-1-0745		
				5b. GRANT NUMBER 370950		
				5c. PROGRAM ELEMENT NUMBER		
				5d. PROJECT NUMBER 03PR09277-00		
6. AUTHOR(S) Brunk, Blanche R.				5e. TASK NUMBER		
				5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Alaska Fairbanks CRA, Health Programs 305 Tanana Drive, Brooks Bldg 1st Floor #107 Fairbanks, AK 99775-6500					8. PERFORMING ORGANIZATION REPORT NUMBER 370950	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) University of Alaska Fairbanks Grants & Contract Services Administrative Services Center RM# 109 Fairbanks, AK 99775-7880					10. SPONSOR/MONITOR'S ACRONYM(S)	
					11. SPONSOR/MONITOR'S REPORT NUMBER(S) SF 298	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for Public Release; distribution is Unlimited						
13. SUPPLEMENTARY NOTES						
14. ABSTRACT <p>Less than one percent of all math, science, and engineering baccalaureate and graduate degrees at the University of Alaska Fairbanks (UAF) are awarded to Alaska Native students. Academic preparation, lack of exposure to science careers in rural Alaska and little connection between western science and Native traditional life have combined to impede Native student interest and progress in math and science education. The goal of this project is to further develop and deliver, both on-site and through distance learning, a comprehensive program of developmental and college preparatory math and science courses at Minority Institutions throughout the State of Alaska.</p> <p>An integrated preparatory cohort of math and science courses at five geographically isolated Alaska Native Minority Institutions with campuses in Kotzebue, Nome, Bethel, Dillingham and Sitka that allows for successful articulation to baccalaureate and post baccalaureate study in both the math and science fields will be developed and launched.</p>						
15. SUBJECT TERMS Alaska Native Students, First Generation College students. English as second language speakers, distance education partnerships.						
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT		18. NUMBER OF PAGES	
a. REPORT U	b. ABSTRACT U	c. THIS PAGE U	UU		3	
					19a. NAME OF RESPONSIBLE PERSON Blanche Brunk	
					19b. TELEPHONE NUMBER (Include area code) 907-474-6640	

**Rural Alaska Mathematics and Science Network**

**Blanche Brunk, PI**

**University of Alaska Fairbanks**

**College of Rural Alaska**

**PO Box 756500**

**Fairbanks, Alaska 99775-6500**

**(907) 474-6640 (907) 474-7415**

**Blanche.Brunk@uaf.edu**

**Grant#N00014-98-1-0745**

**Final Report**

**Long-term Research Objective:**

Less than one percent of all math, science, and engineering baccalaureate and graduate degrees at the University of Alaska Fairbanks (UAF) are awarded to Alaska Native students. Academic preparation, lack of exposure to science careers in rural Alaska and little connection between western science and Native traditional life have combined to impede Native student interest and progress in math and science education. Our objective over the life of this project has remained the same: to further develop and deliver, both on-site and through distance learning, a comprehensive program of developmental and college preparatory math and science courses at Minority Institutions throughout the State of Alaska.

**S & T Objective:**

Create an integrated preparatory cohort of math and science course at five geographically isolated Alaska Native Minority Institutions with campuses in Kotzebue, Nome, Bethel, Dillingham and Sitka that allows for successful articulation to baccalaureate and post baccalaureate study in both the math and science fields.

**Approach:**

The UAF formed the Rural Alaska Science and Mathematics Network (RASMN). RASMN hired faculty to deliver courses locally from the remote campuses throughout rural Alaska. Faculty mentored and tutored students taking college courses in the College of Rural Alaska and at the University of Alaska Southeast Sitka Campus.

The presence of qualified math and science faculty at these remote locations positively benefited colleagues, students and the communities. Using an inclusive approach, RASMN outreached young students in the 18 to 25 year old age group advising, recruiting and supporting them in studying math and science subjects and in enrolling in related certificate and degree programs. Most of these young people were first generation college students.

Prior to the Phase Down Period in 2001, RASMN faculty traveled extensively throughout the rural regions to advise and recruit students. With fiscal restrictions in place, telephone, email and web contact with students through the RASMN web site [www.uaf.edu/rasmn](http://www.uaf.edu/rasmn) were the main vehicles for student contact.

20050329 018

### **S & T Completed:**

The following faculty taught mathematics and science courses to approximately 100 students each academic year during the five-year RASMN project:

Lana McNeil Assistant Professor of Geology, UAF Northwest Campus, Nome  
Mason Skiff, Assistant Professor of Chemistry, UAF Bristol Bay Campus, Dillingham  
Tom Harmon, Assistant Professor Mathematics, Sitka Campus UAS  
Jan Straley, Instructor Mathematics, Sitka Campus UAS  
BJ Wolters, Assistant Professor Biology, UAF Northwest Campus, Nome  
Bob Brown, Assistant Professor Chemistry and Mathematics, UAF Kuskokwim Campus, Bethel  
Corky Corkren, Assistant Professor of Biology, UAF Kuskokwim Campus, Bethel  
Brian Rasley, Assistant Professor of Chemistry, UAF Bristol Bay Campus, Dillingham  
BJ Hamilton, Assistant Professor of Biology, UAF Kuskokwim Campus, Bethel

More than 85 percent of the students were Alaska Native from remote communities around the state. Outreach to young college age and high school students was a priority during the RASMN project. Annually RASMN staff and faculty joined in the Alaska Federation of Natives Convention in Anchorage to meet potential new students, parents and others interested in the realm of math and science study. A summer RASMN camp was a special highlight in 2001, when Alaska Native high school students from villages came to the UAF campus for 7 days of in depth exposure to science and math careers, college courses and firsthand experience with the campus community.

The academic linkages between the science and mathematics faculty on the UAF campus and the CRA faculty were strengthened because of the RASMN. Now one of the CRA science faculty positions is jointly funded by UAF. Collegiality is at an all time high.

Although the RASMN project was phased down, it was extended for the full five years of funding, this chain of events presented a full array of challenges and opportunities.

### **Impact/Navy Relevance:**

RASMN enabled more than 400 students to enroll in and complete science and math courses. The impact of this event on a group of first generation college students, most of who were grossly under prepared for any sort of academic success, though difficult to measure on the short term, is still significant in human terms. Even though Alaska is large geographically, the state's small population makes it possible to know many of these students and their families. For this reason, the gains in belief in one's abilities to succeed and other pre requisites for college success, so often absent in these young people, were evident in most that were touched by RASMN.

The final funding period, although drastically reduced, continued the strong focus on meeting the mathematics and science instructional needs of rural Alaska Native students. The educational migration to more on line and distance course delivery is well underway in Alaska as more of the village regions become connected with adequate internet bandwidth available at low cost to communities and schools. The web enhanced science and math courses funded through RASMN

and the lessons learned from their development and delivery will continue to reach students long after the project concludes.